Cook Composites and Polymers Co.

ANNUAL PERFORMANCE EVALUATION
October 1, 2004

Environmental Cooperative Agreement Summary

This Environmental Cooperative Agreement (ECA) provides the structural framework for Cook Composites and Polymers Co. (CCP) and Wisconsin Department of Natural Resources (DNR) to prioritize and focus their resources to evaluate the feasibility and desirability of a waste minimization project to eliminate five million pounds of a characteristically hazardous wastewater and the need for a hazardous waste incinerator.

Specifically, CCP committed to cease burning hazardous waste in its incinerator by September 30, 2001. As part of this agreement, CCP also committed to establish an environmental management system (EMS), and seek other opportunities for waste minimization, pollution prevention, product stewardship and other environmental benefits at CCP's Saukville, Wisconsin facility in cooperation with its neighbors, its customers, the local community and DNR.

ECA Background Information

The CCP Saukville facility manufactures polyester and alkyd resins used in a variety of applications including the coatings, sanitary, automotive and marine industries (SIC 2821and 2851). The facility, located approximately 25 miles north of Milwaukee, began resin production in 1949 and employs approximately 65 full-time staff in Wisconsin.

CCP acquired the Saukville facility and other assets in December 1990 from Freeman Chemical Corporation. CCP is a joint venture company of TOTAL COMPOSITES INC., which is a subsidiary of the French oil and gas exploration, refining, and chemical company TOTAL S.A. (TOTAL), and Curran Composites Inc. of Kansas City, MO. CCP operates in the ATOFINA chemical branch of TOTAL.

The CCP Saukville current production capacity is approximately 52 million pounds of resin per year, produced in up to 3000 batches. Waste streams generated at the facility consist primarily of reaction water, spent solvents, filter cleaning residues, and miscellaneous off-spec materials. Prior to the ECA, the facility historically disposed of two of the waste streams (reaction water and solvent) using an onsite RCRA licensed hazardous waste incinerator.

Baseline Environmental Performance

In 2000, the CCP Saukville facility **generated approximately five (5) million pounds of a characteristic hazardous waste stream known as "esterification water"**, or more commonly **"reaction water"**. The reaction water is a by-product of a condensation reaction of organic acids and glycol that yields polyester and alkyd resins.

The reaction water waste stream was incinerated on site in a facility permitted under the Resource Conservation and Recovery Act (RCRA). The reaction wastewater stream is classified as characteristically hazardous for ignitability (US EPA Code D001) due to the presence of low concentrations (<1%) of chemicals, primarily xylene. The reaction wastewater would at times exhibit a flash point below 140 degrees F, presenting a fire risk. The waste also at times is acidic and is classified as characteristically hazardous for corrosivity (US EPA Code D002) due to low pH (<2 units).

In 2000, the CCP Saukville facility **generated approximately 1.8 million pounds of spent xylene solvent (F003) waste** that was treated and disposed by the incinerator. Since the solvent was used as supplemental fuel to incinerate reaction water, the alternative of recycling the solvent was historically not considered economically attractive or important.

Additional environmental performance data tables for the baseline year 2001, as well as operating years 2002 and 2003, are included as Attachments 1 and 2 respectively. The data tables include air emissions, waste data, and water discharges as reported in the annual Toxic Release Inventory (TRI) reports and available on the WDNR FACTS database. Additional data on natural gas consumption, electricity use, greenhouse gas emissions, and water use is also found in these tables.

ECA TARGETS AND RESULTS

Regarding Commitment to Regulatory Schedule

CCP recognized the economic, environmental, and community relations benefits associated with moving to waste minimization and pollution prevention approach for management of its hazardous wastes. The primary challenge was to synchronize the CCP technical and business evaluation of waste minimization and pollution prevention options with the regulatory requirements and regulatory review of Wisconsin DNR and U.S. EPA staff from many different environmental programs.

All regulatory reviews were completed in a timely manner that allowed CCP to meet its target for ending hazardous waste incineration.

Regarding Cost Savings from Regulatory Flexibility

CCP revised and updated the incinerator Hazardous Waste Facility Feasibility and Plan of Operation Report (FPOR) according to the schedule in the DNR "call-in" letter. CCP did not request waste stream changes in the updated FPOR.

As a result, CCP was not required to provide a new trial burn test for the remaining period of operation. CCP saved an estimated $400,000 of consultant and contractor direct costs, and hundreds of hours of CCP staff time. A trial burn test is normally conducted prior to licensing a facility, or as part of a 10-year permit renewal approval.

The WDNR also saved a considerable (but not yet defined) amount of staff time because WDNR staff were not required to review work plans and tests for a CCP facility that was about to close.

Regarding Waste Minimization and Pollution Prevention

Recovery of Xylene with Macro Porous Polymer Extraction (MPPE)

CCP evaluated the viability of waste minimization and pollution prevention options for management of reaction water at the Saukville facility, and other CCP facilities in the United States. CCP commissioned a pollution prevention study specifically focused on recovery of the ignitable constituent xylene from the reaction water.

The purpose of the study was to evaluate options for reducing hazardous waste generated by eliminating the hazardous characteristics of the water. The reaction water study focused on a new, Macro Porous Polymer – Extraction (MPPE) technology developed by Akzo Nobel Inc. CCP also considered beneficial use of recovered xylene from reaction water, as well as the waste azeotrope xylene and rinse xylene.

CCP committed to and implemented the MPPE technology and ceased the burning of hazardous waste in its incinerator by September 30, 2001. This was two years before it would be required to do so under regulations promulgated by the US Environmental Protection Agency (US EPA). CCP received approval from WDNR for RCRA Closure of the CCP hazardous waste incinerator in June 2002.

Glycol Recovery from Reaction Water by Distillation

As reported previously, CCP also commissioned a study of the recovery of glycol from reaction water using the Research and Development (R&D) resources of its majority partner, Atofina (Cray Valley) based in Paris, France.

The study considered current treatment and separation techniques to treat or recover glycol from reaction water. The feasibility study considered available technologies, including the demonstrated practice of distillation of glycol at a Cray Valley (Spain) facility. The study concluded that the economic effect of increased energy consumption of separating glycol from reaction water does not justify glycol recovery.

CCP reported to the Community Advisory Committee meetings in July and October 2002 that the recovery of glycol was not economically feasible for CCP at this time. CCP also noted that the implementation of on site glycol recovery could negatively affect the reliability of the thermal oxidizer, resulting in an increase in unplanned shutdowns and associated odors. CCP experienced such problems at another location.

Reaction Water Treatment by Photocatalysis

As reported previously, CCP was awarded a grant from *Wisconsin Focus on Energy* to fund research at UW-Madison on the photocatalysis of VOCs in reaction water. If trace levels of odor causing semi-volatile compounds could be selectively destroyed, the glycol/water would be more amenable to distillation recovery of glycol. The University of Wisconsin Chemical Engineering Department completed this study in 2003. Unfortunately, the esterification water was resistant to photocatalysis treatment.

Reaction Water Pre-Treatment and Wastewater Discharge to POTW

In the development of the ECA, CCP considered the potential for future pre-treatment and discharge of reaction water to a Publicly Owned Treatment Works (POTW). The ECA included provisions for a Baseline Monitoring Report (BMR) and submittal of the Plans and Specifications (P&S) for wastewater pre-treatment approval by WDNR .

However, the US EPA Region V permit engineers ultimately defined the regulatory classification of reaction water treatment as a Totally-Enclosed Treatment Facility (TETF). Therefore, the pre-treatment approval for the non-hazardous wastewater incinerator was no longer necessary since it was not regulated as a industrial wastewater pretreatment source.

CCP included the operation of the non-hazardous incinerator in its air operating permit application. This air permit was issued in November 2003. Further, CCP currently has no plan in 2004 or 2005 to directly discharge to a POTW, so the development of BMR and P&S documents is no longer an immediate need for the ECA.

Xylene Waste Minimization

CCP continues work on xylene source reduction opportunities as part of an Environmental Management Program (EMP) teams. An EMP is an environmental continual improvement team project that is a basic element of a facility EMS.

Segregation of the solvent waste streams of ***azeotrope solvent*** (used for removal of water by-product during a resin cook) from the ***rinse solvent*** (used to clean reactor vessels, tanks, and piping) was completed with an August 2002 tank installation project.

The use of azeotropic solvent in resin production was reduced by segregating solvent from decanters and reusing the solvent in subsequent batches. This solvent, when spent, must be shipped for beneficial reuse / fuel blending since the odor of the solvent makes it unsuitable for a recycle and return program.

CCP implemented a new program to recycle and return rinse xylene with an off site service (Hydrite), in place of the former service (Brenntag). At current rates, CCP plans to manage approximately 450,000 pounds of xylene through recycling in 2004.

In 2002, CCP evaluated the feasibility of on-site xylene recycling using an agitated thin film evaporator (ATFE). The ATFE is the only recycling technology appropriate for solvent-resin mixtures due to their high viscosities. The estimated payback period of two to three years for this potential investment is not competitive because a cost-effective and local recycling service is available. Further, CCP plans continued reduction in the xylene usage that will diminish the return on investment.

Regarding Community Relations and Stakeholder Involvement

Community Advisory Committee

1. CCP established an ongoing Community Advisory Committee (CAC) to involve all relevant stakeholders within the community including but not limited to:
   - Neighbors,
   - CCP Employees,
   - Area businesses,
   - Local elected and appointed officials,
   - Environmental groups
   - University faculty
   - DNR staff,
   - Local Emergency Planning Committee,
   - Public Works Department,
   - Fire Department,
   - Citizen groups,
   - Neighborhood associations,
   - Others in the greater Saukville area who may be affected by or interested in the CCP facility and its activities.

2. The CCP CAC met quarterly at CCP from January 2001 through the end of 2003. In 2004, the CAC agreed to revise its schedule and meet on a semi-annual basis (January and July), unless specific issues require more frequent meetings. Meetings are open to the public, and open public comment is accommodated at a set time on each agenda.

3. CCP maintains an up-to-date list of the individuals participating on the Community Advisory Committee (CAC). CCP provides an up-to-date committee membership list and other information including agendas and meeting summaries to members of the CAC, the DNR, and the Saukville Public Library.

4. CCP was recognized by the Wisconsin Environmental Working Group with a 2004 Business Friend of the Environment Award. It recognized CCP's efforts to integrate Community Involvement into the prioritization of EMS activities.

Other Community Outreach Activity

CCP committed to provide additional opportunities for information exchange and dialogue with the community through implementation of its outreach plan including:

1. CCP developed a newsletter (CCP EnviroNews) that is used to regularly communicate with the advisory committee, and stakeholder residences and businesses in Saukville, and others who indicate an interest in CCP and its environmental performance.

2. CCP developed prototype chemical fact sheets for the local community and neighbors. Ten (10) additional fact sheets, prioritized by risk and usage, were completed in 2003 and distributed to the CAC in 2004.

3. CCP conducted a plant tour for the CAC and any interested members of the general public on July 14, 2004.

4. CCP conducts a Community Survey *biennially*, a change from original ECA based on community feedback. The survey is used to gauge public perception of CCP environmental performance changes. The baseline Community Survey was conducted in 2000, with another in 2002. CCP distributed the 2004 Community Survey in September 2004. The results of the survey have not been received at this time. The results will be shared with the CAC at the January 2005 meeting.

5. CCP updated the CAC on the following capital improvement projects:
   - Process tanks to increase CCP production capacity for water-based products
   - Pavement the employee parking lot to reduce dust
   - Installation of the enclosed SparklerTM filter to reduce fugitive emission and odor
   - Plans for closing the solid non-hazardous waste incinerator
   - Plans for closing the non-hazardous liquid incinerator
   - Plans for a special drum handling, filling and storage facility

Regarding Implementation of Environmental Management Systems

From 2002 through 2004, CCP implemented an integrated environmental management system that is based on the standards for environmental management systems issued by the International Organization for Standardization (ISO) or that has equivalent components.

Kestrel Management Services was retained by CCP to assist in the training, coaching and facilitation of the CCP team charged with implementation of an integrated environmental management system (EMS). Working sessions began in September 2002 and continued into late 2003 using an innovative "Lesson Plan" approach including classroom training and work sessions.

In the 2001 ECA, CCP proposed using the DNV Prosper™ auditing system. This system was later discontinued by DNV. CCP now uses the Atofina Integrated Management System™ (AIMS) and the associated audit software entitled SUMMIT™ that was developed in partnership by Atofina and DNV. DNV is an internationally recognized registrar for ISO 9001 and ISO 14001 standards.

AIMS is an improvement and replacement to DNV Prosper™. AIMS integrates Quality, Safety and Environmental (QSE) management systems, as well as Responsible Care™ Codes and OSHA Process Safety Management requirements into a comprehensive management system and auditing framework.

AIMS Internal Baseline Asssessment – October 2003

CCP was audited according to the AIMS protocol by independent representatives of Atofina Petrochemicals and Atofina Chemicals in October 2003. The audit is referred to as an Internal Baseline Assessment in the AIMS terminology. The results of the Internal Baseline Assessment were quite favorable. CCP Saukville demonstrated a Level 7 AIMS rating, which indicates a well designed and developed management system.

AIMS Internal Pre-Assessment – April 2004

CCP received another audit using the AIMS protocol by independent representatives of Atofina Petrochemicals and the Sartomer Company in April 2004. This audit is referred to as an Internal Pre-Assessment in AIMS terminology. The results of the CCP Saukville Internal Pre-Assessment showed continued improvement with a high Level 7 (near Level 8) rating.

The requirements of Element 21 and other related Elements of AIMS necessary to attain a Level 7 or 8 are considered by DNV to exceed those of the ISO 14001 Standard. DNV published guidelines consider the basic system requirements for ISO 14001 registration to be equivalent to a Level 4 in the DNV numeric loss control ranking system used in AIMS.

Registration Audit Plans – ISO 14001 / AIMS

CCP plans to complete pre-assessment registrar audit with DNV in December 2004. In 2004, DNV has been training and developing auditors that are capable of auditing an integrated QSE management system. Since AIMS is a new approach to management systems auditing, CCP has encountered some challenges and delays in scheduling its registration audit.

Other Management System Activity

CCP has also developed management systems for Product Stewardship and Transportation Management in the context of the industry initiatives of Coatings Care™ (National Paint and Coatings Association) and Composites Care℠ (Composite Fabricators Association).

Regarding Progress to Superior Environmental Performance

Progress for CCP Saukville

As part of the commitment to Superior Environmental Performance, CCP committed to going beyond what would otherwise be required in environmental regulations by setting the following goals for its Saukville facility:

- Through waste minimization and pollution prevention, eliminate or significantly reduce the waste streams that were previously burned in its hazardous waste incinerator without transferring them to another environmental media.

    - ✓ Through its waste minimization efforts CCP ceased the on site incineration of nearly seven million pounds of hazardous waste annually. Every post-MPPE wastewater batch since September 30, 2001, met the criteria for non-hazardous wastewater for ignitability with measured flash point of greater than 200 F, and for corrosivity with pH greater than 5 to 6.

      The results of the MPPE system xylene recovery efficiency are included as Attachment 3. The system attained xylene removal efficiency averaging over 85% , and as high as 99%, in the operating years 2001 to 2004. CCP continues efforts on improvement of MPPE operating consistency.

    - ✓ **Source reduction** resulted in a substantial decline in xylene use as shown in Table 2. Source reduction efforts included reducing rinse volumes, segregation and reuse of azeotrope solvent, and the CCP production shift toward water-based polymer dispersions.

    - ✓ CCP will **recycle for reuse** approximately 450,000 pounds of spent xylene solvent in 2004 using off-site distillation.

    - ✓ CCP will **recycle for reuse** approximately 600,000 pounds of spent glycol generated from its scrubber system and reactor cleaning in 2004. CCP used off-site vendors for this recycling. This is the first year of this Environmental Mangagement Program (EMP).

    - ✓ CCP estimates up to 1,400,000 pounds of xylene solvent waste through **off-site beneficial reuse (energy recovery)** for 2004. The CCP solvent is a cleaner fuel alternative for cement kilns compared with heavy fuel oils or other hazardous waste, resulting in reduced emission at the respective kiln. US EPA considers these wastes as “comparable fuels” because they are typically cleaner to burn (lower NOx, SOx etc.) than traditional fuel oil.

Regarding Progress to Superior Environmental Performance

Progress for CCP Saukville (Continued)

- ✓ Other relevant environmental data for the baseline year 2001 and operating years 2002 and 2003 including air emissions, water discharges, and other waste streams are found in Attachments 1 and 2, respectively.
- ✓ Broader environmental performance data (including natural gas consumption, electricity, water, wastewater, etc.) for years 2001 through 2003 is also included in Attachments 1 and 2.

- To establish a long-term reduction in the amount of wastes generated and contaminants and pollutants released giving priority to those pollutants, contaminants and wastes of highest health and environmental concern (SEE ABOVE, AND TABLE 1 & 2)
- Through implementation of the CCP EMS, continuously improve CCP practices to minimize environmental impacts and conserve natural resources and to work cooperatively with its neighbors, the local community and others. (SEE ABOVE)
- To take leadership in Product Stewardship, integrating environmental considerations into the design and development of products.
  - ✓ CCP led the commercial development of low-styrene (low HAP) composite resins as well as water-based alkyd/acrylic dispersions used in water-based coatings and stains. The development of products using the water-based dispersion technology has contributed to a substantial reduction in xylene use as shown in Table 2.
  - ✓ CCP low-VOC resins (LOVOCOR™) and low-HAP (Styrene) and MACT-compliant resins (MC™ Series) are industry technology leaders. CCP will help customers meet MACT requirements using pollution prevention, rather than pollution control.
  - ✓ CCP continues growth and development of a profitable product line of aqueous cleaners (Thermaclean™) and no-HAP and low VOC emission solvent cleaners (Unisolve™) for use in the composites fabrication industry.

TABULATED RESULTS OF POLLUTION PREVENTION PROGRESS

TABLE 1 - XYLENE WASTE MINIMIZATION (Source Reduction & Recycling)

Year	Spent Solvent (lbs / year)	Solvent Cost Savings from Recycling ($ / year)	Solvent Incinerated (lbs / year)	Solvent Recycled (lbs / year)	Beneficial Reuse - Fuel (lbs / year)
2000	1,774,000	0	1,774,000	0	0
2001	1,730,500	0	1,300,000	80,500	350,000
2002	1,570,000	$90,000	0	230,000	1,340,000
2003	1,730,000	$145,000	0	370,000	1,360,000
2004*	1,900,000*	$175,000	0	450,000*	1,400,000*

*** Projected through 2004 year end.**

TABLE 2 - XYLENE USE (2000 – 2004 YTD)

Manufacturing Year	Xylene Purchased
2000	4,080,000
2001	3,200,000
2002	2,940,000
2003	2,460,000
2004 Estimate**	2,400,000**

**** Projected through 2004 year end and includes recycled solvent. It also reflects the continued production shift by CCP to water-based polymer dispersions.**

Attachment List

Attachment 1 - Environmental Performance Data (2001 / 2002)

Attachment 2 - Environmental Performance Data (2002 / 2003)

Attachment 3 - MPPE Sampling Results (SAU)